



Issue Paper

Subject: Fatal Accident Statistics

Originally published in MCDOT By-Cycle December 2000

Page 1 of 3

Fatality Rankings

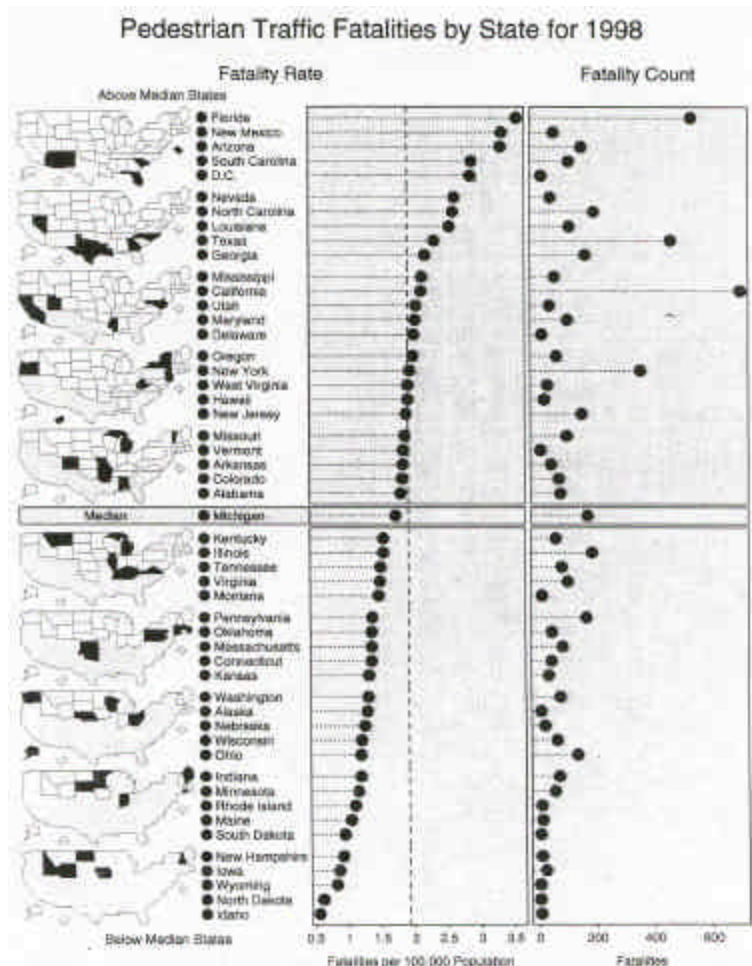
Fatally Flawed

by Reed Kempton

A few years ago, while working as a bicycle advocate, I received a telephone call from a representative of a local safety organization. He asked if I had seen the latest study ranking the states by bicycle fatalities. I responded that I had not but would expect Arizona to be in the top three. The particular study he was referring to uses data from the past ten years and calculates bike fatalities per state population. He informed me that Arizona was second and seemed shocked that I was neither surprised nor upset.

He then asked one of the most ridiculous questions I had ever heard. "Now that you know this information, aren't you afraid to ride your bike here?" I don't remember my exact response but I was not invited to the press conference to promote these findings.

Every year the National Highway Traffic Safety Administration compiles data on fatal accidents. The graph on the right is typical of the information released. The fatality rates are computed based upon deaths per population. Arizona is always in



the top five for both pedestrian and bicycle deaths per population. This data alone would indicate that Arizona is one of the most dangerous places to walk or bike.

Issue Paper

Subject: Fatal Accident Statistics

Originally published in MCDOT By-Cycle December 2000

Page 2 of 2

This analysis has a fatal flaw. The rates are based on deaths per population, not on the number of people actually walking or bicycling. Look at Figure 1 showing pedestrian fatalities by state for 1998. The top three maps on the left side show states only in the southern half of the country. The bottom three maps show states only in the top half of the country. Is it possible that climate has something to do with accident rates?

The problem with the rankings is that it gives an unfair portrayal of reality. It is not necessarily more dangerous to walk or bike in Arizona than in most other states. It may actually be safer than many. Nearly all our streets have sidewalks and Maricopa County has more than 1200 miles of bike lanes and paths. As we add facilities, more people use them. If more people are bicycling, chances are there will be more bicycle accidents. If we could analyze accidents based on number of people bicycling, we might have realistic comparisons.

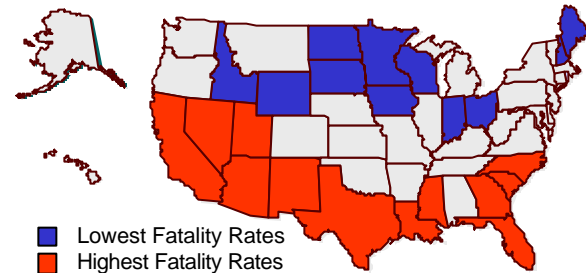
Arizona will always rank high because there are thousands of people participating in outdoor activities every day, regardless of the season. Unlike cities where it snows, Phoenix has no off-season for cycling. It is unlikely that a northern state will have many cycling fatalities in the winter when most of the bikes are in storage.

The maps in Figure 2 show 1998 and 1999 pedestrian fatalities based on deaths per population. The states in red have the highest rates. The states in blue have the lowest rates. Wyoming had four pedestrian fatalities in 1998 and 14 in 1999. This moved them from 47th to sixth.

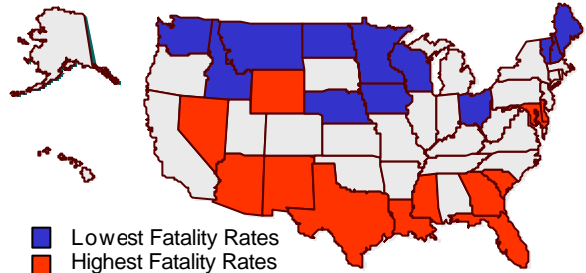
The third map shows the average median temperature of the largest city in each of the states. While it is not conclusive, there certainly is a trend for the states highest in pedestrian fatalities based on deaths per population to be the warmer states.

Figure 2

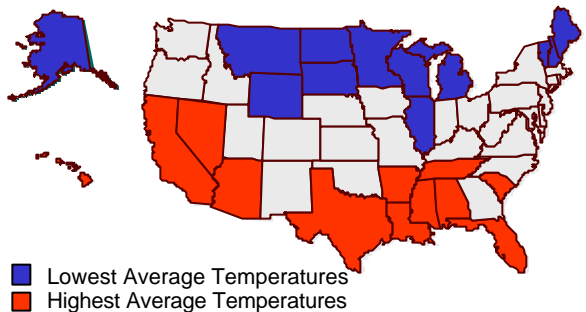
1998 Pedestrian Fatalities per 100,000 Population



1999 Pedestrian Fatalities per 100,000 Population



Average Median Temperatures



Issue Paper

Subject: Fatal Accident Statistics

Originally published in MCDOT By-Cycle December 2000

Page 3 of 3

The bicycle fatalities based on deaths per population (Figure 3) yields a different map. The western states seem to dominate but Florida is the worst. It is interesting to note that the states with the highest fatality rates tend to have the highest percentage of available sunshine. There is a distinct possibility that more people ride their bikes when the sun is shining than when it is not.

The Sunshine State of Florida and Arizona's Valley of the Sun have the highest average temperatures and the most sunshine. Is it a coincidence that they also have the highest rate of pedestrian and bicycle deaths? I believe that there is a direct relationship between warm temperatures, lots of sunshine, and many people bicycling. I also believe that if there are more people bicycling, there will be more bicycle-related fatalities.

Do I think we need to improve? Yes, but years from now (after we have spent a bazillion dollars on bicycle and pedestrian facilities) when the politicians point to the numbers and ask why Arizona **still** has one of the highest fatality rates, I'm going to blame it on the weather.

For more information on this and other bicycle related topics, contact:

Reed Kempton
Bicycle / Multi-Modal Planner
Maricopa County Department of
Transportation
2901 W. Durango St.
Phoenix, AZ 85009-6357
602-506-1630
reedkempton@mail.maricopa.gov
www.mcdot.maricopa.gov/bicycle/bike.htm

